Construction Quality Assurance Plan (CQAP) Lakeview Avenue Modernization U000-106-140 (UPC 101288) IFB 20-120402-1115

Cover Sheet

l.	Date of Original CQAP Submittal: October 19, 2020
II.	CQAP Revision Date (if applicable): N/A
III.	Owner's Name and Physical Address: City of Colonial Heights 201 James Avenue Colonial Heights. Virginia 23834 (804) 520-9334
IV.	Construction Engineer:
	Printed Name: Larry Brown, P.E.
	Consulting Firm: Johnson, Mirmiran & Thompson, Inc.
	Signature of Construction Engineer:
	Contact Information: lbrown@jmt.com
	804-205-5589
٧.	Engineer of Record:
	Printed Name:
	Consulting Firm: Bowman Consulting
	Signature of Engineer of Record:
	Contact Information:804-616-3240
VI.	Locality Responsible Charge Person:
	Printed Name: Keith Chisolm, Project Coordinator
	Signature of Responsible Charge Person:
	Contact Information: chisolmk@colonialheightsva.gov
	804-520-9334

Organizational Chart:

a. See Appendix A

VII.

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CQAP Document

I. Mission Statement

All materials shall be approved, sampled, and/or tested in conformance with contract specifications and the current edition of Virginia Department of Transportation's (VDOT) Locally Administered Projects Manual (LAP Manual).

This Construction Quality Assurance Plan (CQAP) identifies the guidelines under which the City of Colonial Height's inspection and testing staff, Virginia Department of Transportation testing staff and the Contractor's and/or the Contractor's material testing subcontractor will perform their jobs.

The testing staff will consist of the City's contractor ECS for materials testing (Quality Control or QC), Schnabel Engineering (Schnabel) for quality assurance testing (QA), and Johnson, Mirmiran & Thompson, Inc. (JMT) serving as the Inspector.

This project is funded with a combination of Federal, State and local funds, therefore, OIA/OVST is required.

The Contractor will ultimately be responsible for the quality of the construction. However, the City of Colonial Heights (Colonial Heights) has hired JMT to provide inspection services to assess construction processes relative to the applicable standards and specifications. JMT will serve as the **Inspection Firm** for the project and provide an **Inspector** on site at times that construction is being performed on the project. Schnabel will perform all required Quality Assurance (QA) testing in accordance with this QA Plan which is based on the current edition the VDOT Materials Manual of Instruction (MOI), VDOT's Construction Manual, the current edition of the VDOT LAP Manual and VDOT's <u>Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects (modified, refer to Appendix C)</u>. The QA testing staff will provide feedback to the Responsible Charge Engineer (RCE), the Locality Responsible Charge Person and the QA Inspector. The Inspector will assure that the necessary documentation regarding inspections and testing of materials and in-place construction has been performed and adheres to the contract before any payment is recommend for approval to Colonial Heights.

Any deviation from this CQAP shall not occur without a revised submittal of this CQAP to the VDOT District Project Coordinator (DISTRICT PC) for approval.

II. Personnel Certification and Licenses

Copies of Personnel Certifications and Licenses as required by the Contract are available upon request and are kept on file by the Inspection Firm and can be made available to VDOT Richmond District for review upon request. All personnel performing materials testing shall have the necessary certifications and experience/expertise required by the contract documents and the current edition of the VDOT LAP MANUAL. No work shall be performed otherwise.

The Inspector will provide inspection to assess construction processes relative to the applicable standards and specifications. The QA testing staff and QC testing staff will be responsible for performing and reporting of all sampling, testing, reports directly to the Inspector. All team members providing testing and inspection will be required to follow the approved CQAP. The identity of the testing staff will be given to the QA Inspector prior to the start of each work activity.

The RCE role is as defined in the scope of work of the Construction Administration Contract between the RCE's firm and the City. Generally, the RCE will be consulted by the Inspector for all changes or RFIs to the contract documents. The Owner's role is as defined in the contract between the RCE's firm and the Owner. The Owner is represented on this project by the Locality Responsible Charge Person, who is Keith Chisolm, Project Coordinator. Generally, the RCE will represent the Owner and recommend for approval work performed and changes to the contract. Payment applications and changes to the contract will be reviewed by the RCE and QA Inspector with a recommendation sent the Locality's Responsible Charge Person. The Contractor, RCE, and the QA Inspector will perform services for the Owner as defined in their respective contracts with the Owner.

The Contractor's role is as defined in the contract between the Contractor and the Owner. The Contractor for this project is TBD. Generally, as related to this plan, the Contractor is responsible for conformance to the quality requirements of the work and all testing functions.

III. Independent Assurance (IA)

This project is funded with a combination of Federal, State and local funds, but it is not a facility on the National Highway System (NHS) or on a Primary Route maintained by VDOT. Because this project is federally funded, owner-level Independent Assurance/Verification Sampling Testing (OIA/OVST) will be required.

IV. Communication Channels

Once construction starts, the Inspector will coordinate, as appropriate, with the Contractor regarding the inspection and testing frequencies outlined in the CQAP, ensuring that adequate inspection and testing forces are available to meet the scheduled construction activities. The Inspector will interface on a daily basis with the Contractor and the testing team. The Inspector's primary point of contact on site will be the Superintendent. The QC testing staff/QA testing staff, including the technicians, and laboratory, will submit all daily documentation to the Inspector for review and acceptance. The Inspection Firm Project Manager will review/audit these documents routinely (no less than monthly) to assure they are accurate and complete. Lab results may be submitted at a later date in conjunction with internal QA/QC reviews. Any unacceptable work identified by the QA/QC staff will be scheduled for correction, to include additional inspection and testing requirements. In conjunction with the Contractor's weekly look-ahead schedule, the Inspector will assure that upcoming work items are inspected and tested in accordance with the approved CQAP.

Communications will be handled by the inspection staff via the following meetings:

- 1. Monthly Progress Meetings: The RCE or the City's Project Manager will lead the monthly progress meeting that is attended by the Contractor, Inspector, Owner's staff (as appropriate) and VDOT staff (as appropriate).
- 2. Periodic QA/QC Staff Meetings: These informal meetings will be held to ensure each individual understands his or her respective responsibilities and that all work is properly assigned, inspected, tested and documented. Daily communication with the Inspector will take place to review the project's scheduled activities and to ensure proper coordination of QA/QC activities.

The Contractor will provide a two-week look ahead schedule to the Inspector each week and perform daily coordination with the Inspector for advance notice of inspection/testing. The Contractor will contact the city's subcontractor performing the materials testing and/or quality control testing is required. The Inspector will contact QA Testing staff when testing is required. The Inspector will oversee all on-site materials testing and will also coordinate directly with the RCE, the Owner, VDOT, and all testing staff if needed.

V. Resolution Procedure

In the event of unclear contract specifications, published guidelines, or disputes related to substandard materials, the dispute will be resolved in the following manner: The Contractor shall immediately report to the RCE, in writing, all discrepancies, that it finds between the Contract Documents and site conditions and any inconsistencies or ambiguities in the Contract Documents. The RCE shall promptly correct such discrepancies, inconsistencies or ambiguities in writing. Work done by the Contractor after it discovers such discrepancies, inconsistencies, or ambiguities, but before the RCE has provided a written correction, shall be performed at the Contractor's risk. The most stringent requirement will be considered the controlling requirement.

VI. Progress Reports

Progress reports will be provided by the Inspector to the Owner and the RCE on a daily basis. Progress reports will be available in a SharePoint folder for LAP Coordinator review.

A sample copy of the daily dairy is included in Appendix E.

VII. Materials Acceptance Records and Test Data

During construction and prior to acceptance of the project, Materials Acceptance Records and Test Data shall be kept by the Inspector and readily available for inspection at all times by VDOT Richmond District.

This section describes the responsibilities and requirements for the identification, preparation, and maintenance of records that furnish objective documented evidence of quality. The term "records," used throughout this section, refers to testing and

inspection records attesting to the achievement of the quality and technical requirements of the work generated during the various phases of project construction activities of the Contractor and its subcontractors and suppliers. Quality records shall be available for review by the RCE, Owner and VDOT at all times.

General

A quality record is defined as a completed document that furnishes objective evidence attesting to the quality of items and/or activities. Quality records shall be legible, identifiable, and retrievable. These records shall be protected against damage, deterioration, or loss. Requirements and responsibilities for record transmittal, distribution, retention, maintenance, disposition, and department or organization responsibilities shall be in accordance with the Contract Documents and the appropriate rules and regulations contained therein, and the current edition of the VDOT Construction Manual, where applicable.

Quality records shall be indexed. The indexing system shall include, as a minimum, record retention times and the location of the record within the record system. The records indexing system shall provide sufficient information to permit prompt retrieval, and identification between the record and the item(s) or activity(ies) to which it applies. The retention period for quality records shall be in accordance with the requirements of the VDOT Post Construction Manual: for federal aid projects, project documentation supporting all payments for materials, price adjustments impacting reimbursements, and claims documentation must be kept on file and available for inspection for no less than three years following FHWA and/or VDOT acceptance of the final voucher and the municipality shall make such records available to VDOT upon request.

The QA Inspection Firm shall maintain the project Materials Notebook, recording materials used, source of material and method of verification used to demonstrate compliance with VDOT standards. The Materials Notebook shall be maintained according to VDOT Materials Division requirements.

The QA Inspection Firm shall also maintain project Diary. The QA Inspection firm will utilize a software database for the Diary and a standard VDOT Form TL-142DB for the materials notebook. The QA Inspection firm or the RCE may also utilize other

collaborative electronic software as appropriate for sharing records. A sample Inspector Diary is shown in Appendix E.

Each of the QC/QA technicians shall summarize their daily inspections, tests, and material sampling activities in a daily report. The report will include a summary of the Contractor's daily construction activities. Supporting inspection data sheets will be attached to the daily report where needed. Copies of the inspector's records shall be provided to VDOT upon request. All reports will be completed and incorporated in the project records within 24 hours.

At a minimum, the project diary will include the following information:

- Work performed by the firm, subcontractor, or material supplier, identified by Work Package notation
- Weather conditions
- Inspections performed and their results
- Communications
- Type, location, and results of all tests performed
- Delays encountered
- Safety related problems and corrective action taken
- Non-conforming work and the corrective action taken
- Reports on any meetings held and their results
- Record of visitors to site
- Signature of inspector

The Inspector will be responsible for the creation and/or management of the following additional reports and logs:

- Materials Invoices and Delivery Tickets
- Nonconformance Log
- Test Reports (provided by QA/QC technician)
- Punchlist
- Progress Meeting Minutes (provided by RCE)

The inspectors will use the following VDOT forms to further document inspections and testing:

VDOT Form	By Contractor	By Inspection Firm
VDOT C-25, Source of Materials	Complete, review and submit to RCE. A new form is required for any material change or changes to	C-25s will be reviewed and submitted for VDOT approval in accordance with the LAP Manual.
	previously approved materials.	Compile documentation to show that materials used complies with the approved C-25.
VDOT C-107,	Complete once every five days or 48 hours after a significant rain event,	Review all submitted by Contractor.
Runoff Control Inspection Report	classified as 0.25" in 24 hours.	Complete once every five days or 48 hours after a significant rain event, classified as 0.25" in 24 hours.
VDOT TE-97001,	Contractor's certified WZ Supervisor will establish and maintain the WZ.	Weekly and after each traffic pattern change (day and night).
Work Zone Safety Checklist	Will establish and maintain the WE	pattern change (day and night).
VDOT C-85,	One form for each day's production – signed by certified	Review forms submitted by Contractor.
Pavement Marking	applicator and QC Tech	contractor.

The Inspector and Contractor will refer to the following documents during inspection and testing:

- current edition of the VDOT Construction Resource Guidebook
- current edition of the VDOT Construction Quality Improvement Program Checklists
- current edition of the VDOT Construction Manual (2005 with 2016 revisions)
- current edition of the VDOT Post Construction Manual (December 2016)
- current edition of the VDOT Instructional & Information Memorandums (I&IM) All Divisions
- current edition of the VDOT Road and Bridge Standards, Vol. 1 and Vol. 2 (2016)
- current edition of the VDOT Road and Bridge Specifications (2016)
- current edition of the VDOT Guardrail Installation Training (GRIT) Manual Dated August 2017

- current edition of the VDOT Survey Manual
- current edition of the VDOT Manual of Instruction for Material Division
- current edition of the VDOT Virginia Work Area Protection Manual

Control of Quality Records

The Inspection Firm Project Manager verifies record accuracy and maintains copies of all quality-related documentation. These records will be stored in files maintained in the project document control files. All original documents pertaining to project information will be maintained in the project file. A complete set of project records (paper copies and electronic copies) will be provided to the Owner at the completion of the project. The Inspection Firm will maintain the physical records at its office. These records will be made available to Colonial Heights and VDOT upon request.

Off-Site Fabricated Materials

The Contractor will identify to the RCE any offsite fabricated materials from producers not in an existing VDOT QA/QC program and the Contractor shall procure the services of an independent testing agency to satisfactorily show that the materials meet the requirements of the contract. The Contractor shall document all materials sources using a Source of Materials, Form C-25.

Red-Line Record Drawings

The Contractor will be responsible for the preparation and submission (at the end of the project) of red-line record drawings that are maintained daily throughout the construction process. The red-line record drawings will record approved actual field conditions upon completion of the work. Where there was a change to a specified material, dimension, location, or other feature, the as-built drawing will indicate the work performed. The Inspector will review red-line record drawings and provide to the RCE.

VIII. Materials Testing Methods and Frequencies

All materials testing, testing methods and frequencies shall follow the Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects— except as noted in Appendix C. The Inspector will review the materials testing results for compliance with the LAP Manual requirements.

Field and laboratory sampling will be performed for each material type that meets the frequencies outlined in Appendix C of this CQAP. Work will be sampled so that it meets the 2016 VDOT Road and Bridge Specifications, the Construction Manual (current version), Materials Manual of Instructions, and LAP Manual (Chapter 13). In addition, any material that appears defective or inconsistent with similar material being produced will be sampled, unless such material is voluntarily removed and replaced or corrected. Samples will be taken in accordance with Virginia Test Methods (VTM), American Association of Highway and Transportation Officials (AASHTO) procedures or other acceptable procedures by personnel approved by VDOT.

All QC testing will be performed at the direction of the Inspector. Field and laboratory testing will be performed for each material type that meets the frequencies outlined in the LAP Manual. The QC testing requirements can be found in Appendix C. Copies of all test results will be furnished to the Inspector as soon as possible after the test has been performed, recorded, and the results checked to ensure compliance with the appropriate testing guidelines. The requirements for furnishing test results do not include sample aging or curing time; therefore, reporting times will be extended accordingly. If necessary, proposals will be submitted in writing for approval to use alternate AASHTO or state-approved test methods.

A preliminary testing plan for each material type has been developed and is provided in the Appendix C. More specific testing quantities and/or frequencies will be established by the Contractor before initiation of corresponding work package activities. At a minimum, the project schedule will be evaluated in "look-ahead" 30-day increments to establish more finite testing quantities applicable within that period. This will be discussed at inspection meetings specific to planned work activities.

All sampling and testing will be performed by a laboratory that is either:

- A. Accredited in the applicable AASHTO procedures by the AASHTO Accreditation Program, or
- B. Complies with the requirements of AASHTO R18 (18th edition) for those tests to be performed and compliance with R18 for those tests not covered by ASSHTO Material Reference Laboratory, or
- C. A laboratory approved by VDOT's Materials Division or other accreditation program meeting the requirements of R18.

October 19, 2020

The Contractor's firm TBD will be performing QC Lab testing for this project. QA Lab

testing will be performed by Schnabel.

All materials testing laboratories shall meet the requirements as outlined in the LAP

MANUAL, Chapter 13.2 for "Qualified Laboratories". No work shall be authorized

otherwise.

IX. Right to Inspect

VDOT has the right to inspect the work, in accordance with the LAP Manual, as noted

herein. Prior to installing gravel and drain system, the Contractor shall schedule a meeting with the Engineer to review structure drainage connections, subgrade

conditions, etc.

X. Non-compliance

Non-compliance to this CQAP shall be promptly reported through the established

communications process outlined in this CQAP.

Throughout the course of a project, items may be identified that do not meet

specifications. Most of these items are identified as they happen and consequently,

are corrected immediately. There are two classifications of non-compliant work:

1. Level 1: Deficient work identified and corrected on the same day. The

Inspector points out the deficiency to the Superintendent, who corrects it

immediately. This issue is noted in the diary by the Inspector. The Inspector

notes what he found and what the Contractor did to correct the issue. The

issue is closed.

2. Level 2: Deficient work identified and corrected at a later date. These are items

that an inspector identifies in the field, notifies the Superintendent, the

Superintendent agrees to fix the item, and the inspector notes in his diary what

the issue is, the corrective action agreed to, and the date it will be completed.

The Issue Log is reviewed by the QA team on a regular basis to ensure that all

items are corrected. The inspection team performs re-inspection of the item

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prior to removing it from the Issue Log. All issues must be corrected before the Contractor receives 100% payment for that item.

In the event of disputes, or noncompliant work that is not resolved by the Contractor refer to Part V of this CQAP, and the applicable contract documents.

XI. Appendices

Appendix A – Organizational Chart

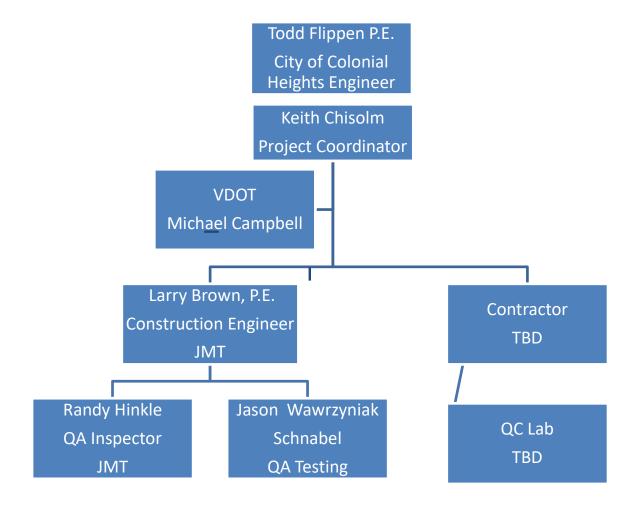
Appendix B – Staff Qualifications Matrix

Appendix C – Testing Requirements and Laboratories

Appendix D – Estimated Materials Testing Frequency

Appendix E - Inspector's Daily Progress Report Samples

Appendix A – Organizational Chart



Appendix B - Staff Qualifications Matrix

Inspector	Firm	Exp.	ACI Concrete Field Grade I	Asphalt Concrete Field I & II	Soils & Aggregate	Nuclear Safety	Pavement Marking	GRIT	OSHA 10- HR No	DEQ SWM Inspector	DEQ E&S Inspector	Flagger	Work Zone Training (Intermediate)
									Expiration				
Randy Hinkle (Lead Inspector)	TML	30	3/9/22	8/10/21	3/17/22	6/15/21	6/15/21 1/18/22	12/31/22	YES	1/16/21	1/16/21	7/31/21	7/31/21
Various (QA Inspector)	SCHNABEL												
Various (QC Inspector)	ECS												
XXX (Senior Inspector)													
XXX (Senior Inspector)													

Appendix C – Testing Requirements and Laboratories

Minimum Requirements for Materials Testing

Material Type	VDOT Spec. Section	Test Reference	QC Frequency –	IA Frequency –	VST Frequency –
Backfill	106.03; 302.03, 303.04, 401.03; Contract Special Provisions	103.04, 401.03; Provisions			
Soils/subgrade/ Embankment	106.03; 302.03, 303.04, 305.03; Contract Special Provisions	103.04, 305.03; Provisions			
Moisture Density Relations - Standard Proctor,	Density control of	VTM-1, VTM-7, VTM-8 and	One (1) test per soil type and with change in	Verify Lab accreditation of the QC laboratory to AASHTO test	Compare all QC borrow submittals against
Analysis & CBR (All Backfill Types and Borrow Sources	and Backfill Sections 106,	AASHTO T 99, AASHTO T 89,	material would be a change in the visual USCS soil	Re: Source website	משנים ביים ביים ביים ביים ביים ביים ביים ב
submittals)	302, 303 and 305 of 2016	AASHTO T 90, AASHTO T 87,	classification (e.g. CL to CH)		
	Road & Bridge	AASHTO T 27,	The Contractor shall		
	Specification Book (2016	AASHTO T 193	results as per VDOT 2016		
	R&B)	AASHTO T 265	Road and Bridge Specifications Section		
In place density tests – Box	VDOT 2016	VTM-10	One (1) test per 100LF,	One (1) test per 1000 LF	One (1) test per 1000 LF
Culverts and Pipes	R&B Section 302.03		each lift, alternating sides		
Abutments, Retaining Walls (including MSE Walls)	VDOT 2016 R&B Section 401.03		One (1) test per 150 CY	One test per 1500 CY	One test per 1500 CY

Material Type	VDOT Spec. Section	Test Reference	QC Frequency —	IA Frequency —	VST Frequency —
Drainage Structures	VDOT 2016 R&B Section 302.03		One (1) test, every other lift around perimeter after bedding layer	One (1) test per five (5) drainage structure	One (1) test per drainage structure
Soils/Subgrade	VDOT 2016 R&B Section 305.03		One (1) test per 500 LF each lift.	One (1) test per 5000 LF	One (1) test per 2500 LF
Embankment	VDOT 2016 R&B Section 303.04	VTW-12	One (1) test per 500 CY, each lift. The average of five (5) nuclear gauge readings comprises one (1) density test	One (1) test per 5000 CY	One (1) Test per 2500 CY
One-Point Proctor		(as needed)	Whenever there is a change in material or compaction equipment/method perform one point. If change of 4.5 PCF in onepoint proctor, then a new Standard Proctor shall be performed		
TREATED SUBGRADE / SUBBASE, AGGREGATE BASE MATERIAL, AND CEMENT TREATED	VDOT 2016 R&B Sections 306.03, 307.05, 308.04, 309.05				

Material Type	VDOT Spec. Section	Test Reference	QC Frequency –	IA Frequency –	VST Frequency –
AGGREGATE BASE MATERIAL					
Depth Checks		VTM-38B VTM-38A	One (1) test per 0.5 mile per lane width Small quantity not suitable for statistical lots (turn lanes, connections, etc.)	One (1) test per five (5) miles per lane width	One (1) test per two (2) miles per lane width
In Place Density		VTM-10	One (1) test per 0.5 miles per lane width Average of five (5) nuclear gauge readings comprises one (1) nuclear density test	One (1) test per five (5) miles per lane width	One (1) test per two (2) miles per lane width, minimum of one (1) test per roadway
ASPHALT CONCRETE PLACEMENT	VDOT 2016 R&B Section 315				
Pavement Density by Nuclear Method with In Place Pavement Density by Cores serving the VST Function Roadways with less than 5000 vehicles perday. (Asphalt Pavement) QAM to take possession of QC, IA and VST asphalt cores/plugs taken on project.		VTM-76, VTM-6, VTM-22	Establish roller pattern, control strips and test sections. Ten (10) stratified random density test sites per test section (5000 LF)	Observe one (1) control strip per ten (10) control strips established by the QC technician. Reweigh the 3 cores or 6 plugs taken from this control strip Minimum of one (1) control strip per project	Two (2) stratified random cores per 25,000 LF of paver width. Both cores obtained from the same test section Minimum five (5) cores per project
Pavement Density by Nuclear Method with In Place Pavement Density by Cores as the acceptance method. Roadways with more than 5000 vehicles per day		VTM-76, VTM-6, VTM-22	Establish roller pattern, control strips and test sections. Ten (10) stratified random nuclear density test sites per test section (5000 LF) plus five (5) stratified random	Observe one (1) control strip per ten (10) control strips established by the QC technician. Reweigh the 3 cores or 6 plugs taken from this control strip	Two (2) stratified random cores per 25,000 LF of paver width. Both cores obtained from the same test section Minimum five (5) cores per project

Material Type	VDOT Spec. Section	Test Reference	QC Frequency –	IA Frequency –	VST Frequency –
(Asphalt Pavement) QAM to take possession of QC, IA and VST cores/plugs taken on project			density test sites per test section (5000 LF)	Minimum of one (1) control strip per project	
In Place Pavement Density - Distances too short for Control Strip Establishment	VDOT 2016 R&B Section 315.05 (e) 2	9-MLA	One (1) set of two (2) sawn plugs or one (1) core in the first 20 tons and one (1) additional set of two (2) plugs	Obtain and reweigh one (1) random core or set of plugs per ten (10) locations	One (1) random core or set of plugs per ten (10) QC locations
(Asphalt Pavement)			or one (1) core for every 100 tons thereafter	Observe one (1) density determination per ten (10) cores weighed by the QC technician	
Depth Checks by Cores (Asphalt Pavement)		VTM-32	One (1) core per 0.25 miles per lane width	Select one (1) QC core per five (5) lots and measure thickness.	Obtain one (1) random core per five (5) lots
				A minimum of one (1) core per project	
HYDRAULIC CEMENT CONCRETE (HCC) - Miscellaneous Items	VDOT 2016 R&B Section 217				
HCC Entrained		ASTM C1077	One (1) test per load	One (1) test per 250 CY	One (1) test per 1000 CY
1. Air Content					
a) Pressure Meter		ASTM C231			
b) Volumetric Meter		ASTM C173			
2. HCC Slump		ASTM C143			
3. HCC Unit Weight		ASTM C138			
4. HCC Temperature		ASTM C1064			
Compressive Strength of Concrete Cylinders (Miscellaneous Items)		ASTM C31/ ASTM C39	One (1) set of three (3) cylinders per 250 CY; minimum one (1) set of three	One (1) set of three (3) cylinders per 2500 CY	One (1) set of three (3) cylinders per 12,500 CY

Material Type	VDOT Spec.	Test	QC Frequency –	IA Frequency —	VST Frequency –
	Section	Reference			
			(3) cylinders per day		
PAVEMENT MARKINGS	VDOT 2016 R&B Section 704				
Marking and Bead Application Rate		VTM-94	Perform VTM-94 at start up with periodic checks every three (3) hours of operation	Review start up calibrations Ensure one plate sample is taken and tested for thickness, width, bead distribution and embedment Retain sample for further testing if needed. Review all of the C85 reports daily to verify calculated quantities match the application rates and confirm that daily measurements were performed as described in VTM- 94 Performed by QAM inspection staff	Randomly select three (3) ten- foot areas at the beginning middle and end of in place sections of markings per day Skip lines and edge lines are Considered separately: 1) Inspect PM for correct placement, straightness, edges, thickness, bead distribution and embedment, day and night color and brightness. Inspect structure of tape to insure patterned waffles have not been damaged by roller
CEI POC	Engineer of Record	f Record	Contractor POC	QC Testing POC	QA and VST Testing POC
JMT	Bowman		TBD	ECS	Schnabel
Randy Hinkle (Inspector) <u>jhinkle@jmt.com</u>				Sarah Wilkerson swilkerson@ecslimited.com	Jason Wawrzyniak jwawrzyniak@schnabel-
912-515-9255				804-641-4919	eng.com 804-244-8889
Larry Brown, PE <u>lbrown@jmt.com</u> 804-921-8583					

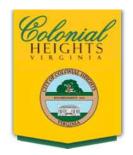
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Appendix D – Estimated Materials Testing Frequency

Using Material Testing Methods and Laboratory Requirements in Appendix C

number of tests for each material will be determined by the contractor's means and methods, and production rates. * Quantities shown are for estimating purposes only, based on the VDOT materials testing requirements. The actual

Appendix E – Inspector's Daily Progress Report Sample



Colonial Heights Public Works Department

Daily Diary

NAME OF INSPECTOR WRITING THIS REPORT:

PROJECT NAME: JOB NUMBER:

DATE:

WEATHER:

PRECIPITATION AMOUNT:

HIGH TEMPERATURE:

HOURS WORKED BY CONTRACTOR:

VISITORS ON SITE (City, State, Contractor, etc.):

NAME OF CONTRACTOR SUPERINTENDENT:

LABOR ON SITE:

EQUIPMENT ON SITE:

OVERVIEW OF WORK PERFORMED TODAY:

Maintenance of Traffic:

Environmental:

Utilities:

Grade:

Drainage:

Paving:

Materials Testing and Inspection:

Issues and Resolutions:

ALLOWANCE ITEMS:

Quantity Today

Undercut Excavation	C.Y.
Undercut Excavation Backfill	C.Y.
Aggregate Material No. 3 (Undercut)	TON
Geotextile Fabric	S.Y.
Geotextile (Subgrade Stabilization)	S.Y.

SUMMARY OF INSPECTION SERVICES TODAY:

Name	Title	Hours Today
	Inspector	
	Inspector	
	Construction	
	Manager	

PHOTOS WITH DESCRIPTION: